

A New and Compleat

Bee-master, &c.

Of Bees, and how to order them.

B E E S delight in broad, warm, and dry Habitations, not narrow and tall, troublesome to ascend, but broad and shallow. And as they delight in a close and private Dwelling, so you must endeavour to preserve them by the smalness and closeness of the Doors, to keep out their Enemies, which are many, and save them much Labour, of watching continually a great part of the Year, and secure 'em in their Sleep; at other times, from being destroy'd, or depriv'd of their Wealth; yet not so as to straiten them in their busie time of gathering.

Many other things you may observe them naturally inclin'd to, wherein you may assist 'em, but be sure to plant nothing near that may be offensive to 'em, nor imagine they will fix their Combs to Frames of your Fancy, or work where you please; nor do you expect so vast a Profit as some talk of, but be content with a plentiful Reward of your Labour.

Bees are known in all parts of the World, except the *Torrid Zone*, from *Asia* thro' all *Europe*, even to *North America*, *Russia*, and *Tartary*, and other remote parts from the *South Sea*, being plentifully stockt with 'em.

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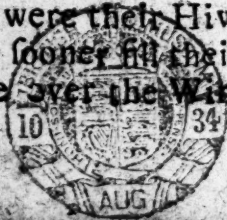
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That there is a King or Queen-Bee, is granted by all *Bee-masters*; and Mr. *Butler*, in his curious Tract of *Bees*, whom none has exceeded, to him I refer you. There is one sold for 1 s. at the Ring in *Little-Britain*, bound in 12^o.

Here observe, that *Bees* begin to breed about the middle of *February*, if they are well nourish'd and the Spring warm, else in *March*, by laying their Seed or Eggs at the bottom of their void Cells, which by the warmth of those that sit on 'em, are converted into Worms or Grubs; and the old Bees sitting on, warming, and nourishing these Grubs, in about 21 days a whole sett of these Insects are generated: And as the Spring comes on and Food encreases, so they encrease their breed throughout *March*, *April*, *May*, *June*, and *July*, always feeding their young either with their old stock of Honey in bad weather, or with new Food and Water, which they gather for their young if the weather is warm enough for 'em to fly abroad, or else in building Combs, as far as their room will permit, and as suits their convenience. Thus they build and breed till the end of *July*, and sometimes after; and you may be sure that when they have done swarming, they have done breeding, and not before.

'Tis certain they don't spend their time these Spring and Summer months in Idleness, but to maintain and encrease their number, during that part of the Year that yields 'em plenty of matter out of the various Bloffoms that are abroad, for building their Combs and feeding their young, until not only the matter that is fit for those Uses cease, but till Oak-Leaves and other Honey-yielding Plants and Leaves afford plenty of that Heavenly Dew, which they lay up in store for Winter and Spring provision, whereof their Owners oftentimes deprive 'em.

You need not fear their overstocking themselves, for were their Hives never so full of Bees, they would the sooner fill their Cells with Honey, and the better live over the Winter. After they have kill'd their
Drones,



Drones, which they commonly do before the gathering of their Honey, there's not an idle Bee nor a Beggar among 'em.

How to encrease Bees by Swarming.

MAny persons have attempted to encrease Bees without the trouble and hazard of swarming, by allowing them liberty in Spring and Summer to swell their great number into several artificial Hives, set one under or near the other: but when they have disperst 'em into several Boxes or Hives, and near an equal number in each Box, yet when they are thus separated from the old Stock, they will not thrive; and this is an Argument of their want of and love unto their King, which without doubt remains in the first stock, from which if a part of 'em voluntarily depart, by swarming with their Leader, they set themselves to work quickly. So that from my own or others Experience I could never observe the stocks of Bees could by any other ways or means than their own voluntary Wills be multiply'd or encreas'd in swarming.

If you desire many Stocks in your Beehouse, or are minded to keep your ordinary stock only for encrease wherewith to store your better Hives, which you keep for the sake of the Honey, be sure overhive not your Bees, for the less the Hives be, the oftener they will swarm; besides, if you overhive 'em, they seldom encrease, unless it be a very early Swarm, and in a kindly Summer.

In good Summers an early Swarm (not overhived) may cast a Swarm itself; which argues, that they do not spend their Time in Idleness and Luxury; and, that altho' they have room sufficient in their Hives to make their Combs and store themselves with Honey, yet they do breed during the time of breeding, else they could not so soon send forth a new Colony, and cannot imploy themselves for Honey-gathering before it falls.

The Bees are not at all hinder'd nor confounded

in sending forth of Swarms or Colonies, it being but the work of 2 or 3 days to prepare for a Swarm, unless bad weather hinder, which may as well prevent them from working as swarming.

The very next day after they are hived they begin to make their Combs, if the weather will allow of it, and will in a few days make large ones, laying Eggs for another brood. So that it plainly appears they are in no confusion either before or after swarming; or that they lose any time but the day they swarm on. They usually swarm twice a year, and often three or four times in a hot Summer; so that you need not fear a decay of your stock if you are but careful, but may expect every year a supply from each Hive to fill your new ones, without lessening your breeding-stock; as may likewise be expected a store left for a future encrease, and those that are past Labour left you beside, if you do but take care not to over-hive 'em.

Beehives to make.

K Eepers of Bees formerly made Hives of transparent matter, that they might see the Bees work, but this did not succeed, for you cannot thro' the clearest Horn or Glas discern their working, nor their Combs, except it be in *July* or *August*, about Noon, when Bees are most abroad, and their company is small by their killing the Drones and the dying of the old Bees, whose Wings are worn away so that they drop when from home, and cannot return again; then indeed you may discern their Combs and Honey; but from that time (*viz. July and August*) they work not in making Combs, nor yet in breeding.

'Tis the Opinion of some, That by the light of those transparent Hives the Bees work with more quickness; pleasure, and delight; but it may be observ'd, that in the darkest Caves or Cells they shape their Combs as finely as in the most lightsom; besides, the numerous Labourers do so much darken their Work in transparent Hives, that the Light can be

be but of small advantage to them; for which reason likewise Glass can be of no great use.

Some think that Bees take great pleasure in these light Hives, and are by that means more prompted to work; but this is difficult to determine whether so or not.

It is not unlikely that an Hive made with large squares, of fine English Glass that is very transparent, may not incommode Bees, provided each Glass Window hath a Shutter to it, to keep out the Cold, as the weather may require it. I agree that it yields the Beholder Pleasure, to see these nimble Insects always full of business while hot weather lasts, tho' he has not the satisfaction of seeing their working.

But if you desire to improve *Bees* to the greatest profit, observe their Inclinations, and follow them in that way they naturally take to. As,

1. In whatever place they settle, they begin their Work above, and work downward.

2. In a narrow place, where their number is great, they are much hinder'd in their Work; but in a broad Hive, if their number be proportionable, they begin many Combs, according to their number, and hinder not each other so much.

3. In Hives that are tall, when their Combs are of a considerable length, they grow weary, because they continually go up and down in the narrow passages betwixt their Combs, which is troublesome, and hinders much those that are below; for if you observe, you will find the uppermost part of the tallest Hives are never without Bees, but at the coldest time of the Day or Night very full, and in the hottest they are ascending and descending perpetually. To prove this, I cut off once with a sharp Knife the top of a Straw Hive, and with it some part of the Combs, thinking they would as well have pass'd out that way as at the bottom, over which I placed a glass Hive, after Mr. *Gedde's* way, thinking that if they would have always ascended, they might then have built in

the new Hive over them, but none would abdicate their Combs.

4. You may observe, that they always fix their Work to the top of their Hives, and not only to the Sticks that are put into the Hive; which Sticks strengthens it, and keeps them from falling with the weight of the Combs, and also prevents the Combs breaking, if the Hive should be remov'd, or happen to lean sideways.

5. Bees always swarm for want of room.

6. You cannot easily overstock your self with *Bees* if they have liberty to fly without hindrance to each other, unless the place is barren, and wants Meadows, Water, Oaks, &c. then indeed it may be overstock'd.

How to make a Hive or Box.

1. **L**ET it be about eight inches in height in the inside, and about twelve in breadth, four square, open at the bottom, but close at the top, with a square of the best English Glass on each side about 4 or 5 inches broad, and 5 inches deep, so fastned in that the Air may be kept out of the sides of it; which you may do by fixing it in with Paste or Cotton.

2. Make Shutters for each square of Glass, to put on and off at pleasure by small Buttons or Hasps, or you may make it without Glass.

3. Make two Teeholes or Doors, one in the midst of the one square side at the bottom, and the other in the middle of the other square side next adjoining, that when this Hive stands one Door to the *South-East*, the other may be *South-West*. Let each Door be three inches long, and in depth one third part of an inch.

3. Make another Hive or Box of the same depth, about 6, 7, or 8 inches broader, with two squares of Glass on each side, two Doors on two of the sides, that they may tend to the same points as the other: This Box must also be open at the bottom, and close at the top, except a hole in the middle about three inches

inches square. Also you may make a third Box about two foot over or more, but let it be of the same depth as the former, and remember always to encrease the number of your squares of Glass and Doors proportionable to the Sides.

4. Let the tops of these Boxes be of well-season'd dry Wood, either Beech, Oak, Fir, or Sugar-chefts; and make it in panels join'd, to hinder swelling, shrinking, splitting, warping, &c. The sides must be with Studs and Panels, as all Joyners can inform you.

5. The top of the inside may be either the Board or (if you think 'twill shrink) lined with a thin Mat, or plaister it with fine Mortar made of Hair and Lime, not forgetting to singe the Hair off, which may perhaps stick on the outside of the Mortar.

6. Make Sticks to hang in several parts of the Boxes of about half an inch square, fix'd in the upper part of the Box, and reaching to the bottom or very near it, that it may keep the Combs steady, and the Bees may come easier to their Combs.

6. Of these Boxes, the first you may take a Swarm into at swarming time, and fix it where it is to stand, leaving both the Doors open to the Points before mention'd, which, if the Swarm is large, will quickly be fill'd.

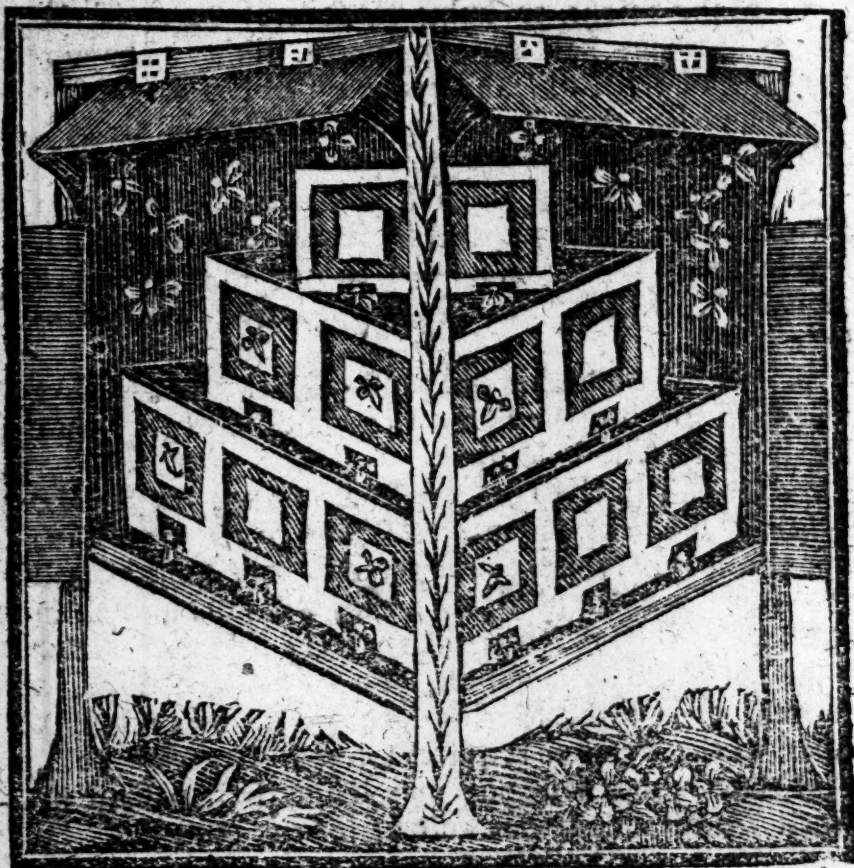
7. When you find it near full, add the second Box under it, placing the first on the middle of that, but leave the middle hole open.

8. Do this in the cool of the Evening, or in the Night; the next day part will take to the new Box, but the majority continue their former business till the upper is quite fill'd, then they will fall to work in the lower, and perhaps fill that the same Summer also. If you find occasion, you may add a third, a fourth, or a fifth, leaving the Doors of each Box open as the weather requires; but if it grows cold, and they labour less, you may lessen their passage by small Wedges made flat and fit for the purpose. So
you

you may likewise keep the Glass shut or open, as you please. You may indeed let the uppermost be a small straw Hive, which is as good (tho' not so fine) as Joyners Work.

9. You may make a wooden Frame with 4 Legs to place these Boxes in, cover'd with Lead, lest the weather spoil 'em, for much they will not endure. Let the drops of Rain be carried from the foremost sides, lest it drive too much on the Hives of Bees.

Let this Beehouse stand East, West, and North, with one corner to the South, that the Boxes also may stand that way the better. Let it have two Doors on each side; the two back-Doors may be whole, and so contriv'd as to open when you intend to move, order or view the Bees. Let it be well fasten'd, leaning a little forward, lest the Wind move it. You may make



the under Door to fold in two, one half to hang on the East and West Posts, and the other on the South Posts, those on the South ones to be taken off all the Summer, and in the Winter likewise, except when you intend to confine the Bees wholly. The opposite Cut shews you the Form of the whole Box and Bee-house.

From this Model of keeping Bees these Advantages will accrue, *viz.*

1. Your Bees will not be hinder'd ascending, the House being low.

2. They will not want Room nor Entrance, for the Doors are wide, and on several sides of the Boxes or Hives, that their passage is free in the most busie time of their Honey-gathering.

3. By thus placing the Hives, they have the Sun all the Day: In hot and dry weather the Morning Sun is best to invite them abroad, before the Dews are off the Flowers and Trees; and the Evening Sun is also necessary at all times.

4. Their Entrance or Doors may be straitned easily, as the Season of the Year requires it.

5. The Boxes may be secur'd in Winter from cold Winds and Rains, and the warm Sun shut out during the Winter Months, which shining on 'em, causes 'em to come out to their ruine, and usually awakens 'em out of their Winter Sleep, stirring them up to spend their Provision, which in Spring time they may want, especially if the weather prove unseasonable.

6. You may at any time use your Glass Windows, to view the numerous company of these laborious Insects.

7. These flat and broad Boxes will entertain with advantage as many of these Creatures as possibly can live together in one Hive, with all imaginable convenience; and as they encrease in number, so may you encrease the Boxes, till you find 'em at a stand, and then 'tis best to take 'em by smothering, provided a hole be left at the bottom of the Beehouse, and

and so kept flopt till you use it for that purpose ; for 'tis weak to imagine that the Honey can be took from the Bees, and they preserv'd from starving.

Bees will never forsake their Combs that are full of Honey ; as I have experienc'd, both by cutting off the top of the Hive and placing another over it, and also by turning the Hive bottom upwards and setting another over it, wherein the Bees built some Combs, but the major part of 'em kept their former old Hives ; and therefore what is said to be done to that purpose I have found to be all in vain.

How to gather Bees.

BEES spend their Time, as long as the weather permits, in gathering of Honey or Wax, as Need requires, or as the Season permits.

In *February*, if fair weather, they fly abroad, and both then and in *March* (as the Spring is earlier or later) they gather much on Dandelion, Hasle, Daisies, Clove Violets, Withy, Daffadil, Alder, &c. but the Philerea they most delight in. One sort of Philerea beareth in *February* or *March* abundance of greenish Blossoms, which yield great plenty of gummy resinous Sweet, which these Insects duly carry to their Hives. A Hedge of this Tree is most acceptable to them, if it could be round their Hives ; it is a close Fence, green all Winter, and yields a great quantity of acceptable Food in the usual time they most want.

These Trees are easily improv'd from Slips, Seeds or Layers, and I am confident it is the best.

The residue of the Spring Bees will gather Honey plentifully on the Blossoms of *Bolace*, *Blackthorn*, *Pear*, *Plumb*, *Cherry*, *Apple*, *Gooseberry*, *Peach*, and divers other Trees in Gardens or Meadows ; so that from one Tree and Blossom to another Bees gather their Honey, but it is more gross than the fine Honey they gather in Summer for their Winter Store, it only serving for present maintenance of themselves and their Brood,

Brood, for want whereof (the old stock of fine Honey being spent, and the weather bad, that they can't gather) they often die; wherefore those Things which afford 'em most early Food ought to be propagated chiefly about the Beehouse.

When Spring is past a little, and *May* well enter'd, then Bees prepare Cells to lay their Treasure for the succeeding Winter, not neglecting their breeding, which they continue till Nature obliges 'em to decline it, and follow their work of Honey-gathering while 'tis to be had. They are all employ'd, some in gathering, others in building, &c.

After Midsummer the pure Honey-dew rests on the Oak-Leaves, &c. and so long as these Dews fall, Bees daily load themselves home with it. They get also much Honey from Thyme, and that ought to be sett near the Beehouses. The Pines are only for shelter, being always green, instead of which place *Philerea*, it being fitter for both shelter and food.

The Honey-dews being over, Bees gather but little, neither build any more Cells, but fill them they have to the top not only with Honey, but all the Intervals with their Bodies; so that if you separate the Bees from their Combs before the fall of the Honey-dews, and take the upper part, you will reap no Advantage, because the young Grub's mixt with the impure Honey. And then if you separate or drive them after, you would not leave Subsistence for 'em all the Winter; and your driving them being a lingring Death, would prove greater Cruelty than a quick Suffocation.

In Autumn they continually employ themselves in gathering pure Honey, but in a small quantity from the time of the Honey-dews till Winter's-Cold hinders their flight, even not enough to renew their Store for the following Winter.



To raise dead Bees to Life.

BEES often dying of Hunger and Cold, take such of 'em as have not been dead long enough to putrifie; hold 'em in your warm Hand, but don't bruise 'em; and in a quarter of an hour they'll come to life; when you find 'em so, open your Hand, and they will fly home to their Hives. By this means I have rais'd many thousands to Life. When their numbers have been too much for my Hand, I have spread a Handkerchief on the Grass, and so pick'd up four, five, or six hundred at a time, and laid 'em at a convenient distance from the Fire, that the heat might be moderate; now and then I turn'd em, that they might all share of the heat, and in a short time they would come to life; so when I found 'em attempting to get away, I have carried 'em to my Garden, and opening my Handkerchief, they have all flown home to their Hive.

Note, these Disasters of Hunger and Cold happen mostly in Spring and Autumn. Whether this Author ever brought to life Bees kill'd by fighting, he does not say; but it seems to me, that it might be as well done by them, as by the drown'd, starv'd, &c. but being a Stranger to that Experiment, I leave it to others, to try if they think it convenient or probable. Mr. Purchase says, that this may be done when the Bees appear or seem as dead; but I cannot think they can be rais'd when quite dead; for, if so, I shou'd think those kill'd by Fighting may as well be brought to life.

How to raise a large Stock of Bees.

IF you begin with five good Stocks, which may cost five Half-crowns or Crowns, the first Year you may have about 12 good Stocks, the next Year about 30, and the third Year 100, if the Years prove good, and you meet not with Casualties; so that if you get an hundred Stocks, they may be worth 25 l. at 5 s. a Stock; which if you begin with double the number, in the same time you will gain double the Profit, or more.

F I N I S.